ANNALS OF CARNEGIE MUSEUM
VOL. 62, NUMBER 4, PP. 341–350 29 NOVEMBER 1993

NOTES ON *AMBLYSCIRTES* SCUDDER, WITH THE DESCRIPTION OF TWO NEW SUBSPECIES (INSECTA: LEPIDOPTERA: HESPERIIDAE: HESPERIINAE)

HUGH AVERY FREEMAN[1]
Research Associate, Section of Invertebrate Zoology

ABSTRACT

Some systematic and nomenclatural problems in *Amblyscirtes* (Lepidoptera: Hesperiidae: Hesperiinae) are resolved. *Amblyscirtes prenda* Evans, 1955, is returned to its original status, *A. tolteca prenda* Evans. *Amblyscirtes elissa arizonae* (Arizona, USA) and *A. fimbriata pallida* (Mexico) are described as a new subspecies. The upper and lower surfaces of *A. tolteca* Scudder, *A. tolteca prenda, A. elissa elissa* Godman, *A. elissa arizonae, A. fimbriata fimbriata* (Plötz), and *A. fimbriata pallida* are illustrated. A synonymic checklist of all *Amblyscirtes* is presented.

INTRODUCTION

When I reviewed *Amblyscirtes* (Freeman, 1973) I stated "there are 31 species in the genus *Amblyscirtes* and for the present I do not recognize any subspecies." Since then I have examined a number of specimens of *Amblyscirtes* from several museums and private collections. On the basis of this new material and with the work of Burns (1990) on the genitalia of the genus, I have changed my concept regarding the status of *Amblyscirtes prenda* and the arrangement of the various species. I now recognize 28 species and three subspecies in *Amblyscirtes* based on genitalic morphology, occurrence of a stigma or brands, and the basic spot arrangement. I follow Evans (1955) in making a distinction between stigma and brand or brands, which are found on the primaries of males in species of Hesperiidae. The term stigma applies to a specialized patch of tubular scales and androconia extending between and sometimes crossing the veins, whereas the term brand or brands applies to the same type of specialized patch or patches but which extends parallel with the vein or veins. I have followed the English system of numbering the veins of each wing from the lowest vein upward, and the space is immediately below the numbered vein. This system was used in describing most of the species of *Amblyscirtes,* and by Burns (1992) in describing a new species of *Halotus* Godman from Mexico. A discussion of the status of *Amblyscirtes prenda* Evans and the description of two new subspecies of *Amblyscirtes* follows.

Material was examined in the following collections: American Museum of Natural History, New York, New York (AMNH); Carnegie Museum of Natural History, Pittsburgh, Pennsylvania (CMNH); private collection of J. P. Brock, Tucson, Arizona (JPB); private collection of H. A. Freeman, Garland, Texas (HAF); United States National Museum of Natural History, Washington, D.C. (USNM).

[1] 1605 Lewis Drive, Garland, Texas 75041.
Submitted 17 March 1993.

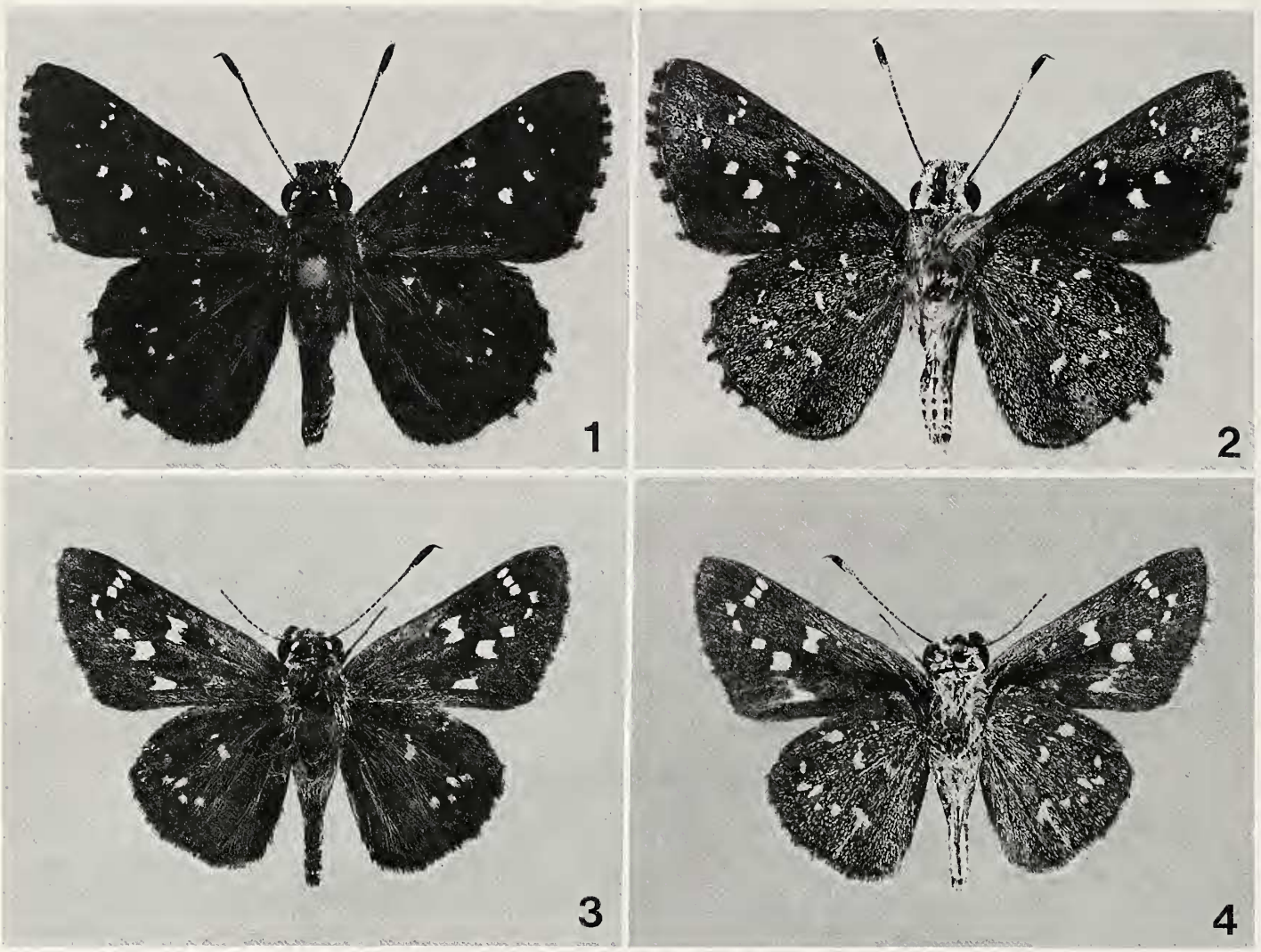

Fig. 1–4.—Subspecies of *Amblyscirtes tolteca* Scudder: 1, *A. t. tolteca* Scudder, male, upper surface, from Mexico, Puebla, Patla, 1800 ft, 16 June 1991 (John Kemner); 2, lower surface of specimen in Fig. 1; 3, *A. t. prenda* Evans, male, upper surface, from Mexico, Sonora, Tepoca, Route 16, 15 July 1988 (D. D. Mullins); 4, lower surface of specimen in Fig. 3.

SYSTEMATICS

Amblyscirtes tolteca tolteca Scudder (Fig. 1–2)

Amblyscirtes tolteca Scudder, 1872:55.

Type Locality.—MEXICO. *Oaxaca*: Tehuantepec.

Diagnosis.—As pointed out by Burns (1990) this species belongs in a group containing *Amblyscirtes celia* (Skinner, 1895) and *A. belli* Freeman, 1941, based on the male genitalia and general maculation. I, as well as Burns (1990), have examined the genitalia of all of the species in the genus *Amblyscirtes* and have found that the basic characteristics are the presence of a long, narrow aedeagus split distally into two, more or less parallel, linearly toothed ends; a long narrow saccus; and a tegumen with a delicate, middorsal caudally arching prong over a somewhat oval opening. Burns (1990) found that both *A. celia* and *A. belli* show striking asymmetry of the terminal end of the long aedeagus. He stated, "along the left side of the aedeagus just before its end, a large, thin triangular plate with a long base curves outward and upward forming a conspicuous pointed titillator (Fig. 2–3, 5–6)." He noted that this structure is also found in *A. tolteca,* but not in any other species of *Amblyscirtes,* and that the general maculation is similar in all three species, especially on the lower surfaces of the secondaries. *Amblyscirtes tolteca* has the greatest spot-pattern development, *A. celia* less well-developed,

and *A. belli* the least developed. On the upper surfaces of the secondaries in *A. tolteca* there are usually five small white spots, one in the cell and four discal, whereas in *A. celia* and *A. belli* these spots are absent. On the upper surface of each primary in males of *A. tolteca* there is a long brand adjacent to the cubitus, between the origins of veins 3 and 2, and a short one under vein 2. These brands are present in both *A. celia* and *A. belli* as well as in many other species, but are shorter.

Description.—See Fig. 1, 2.

Specimens Examined.—(22 males, 11 females). *Nayarit*: 5 mi SW Compostela, 2500 ft, 7 Aug. 1989, 3 males, 4 females (J. Kemner, HAF); Tepic, Sept. 1964, 1 female (T. Escalante, HAF). *Tamaulipas*: Ciudad Victoria, June 1966, 1 male (H. A. Freeman, AMNH); Mante, June 1967, 2 males (H. A. Freeman, AMNH); El Salto, 24 Aug. 1967, 1 male (H. L. King, AMNH); Gomez Farias, 14 July 1973, 1 male (W. W. McGuire, AMNH). *San Luis Potosi*: 6 mi S Ciudad Valles, Hotel Covadonga, June 1966, 4 males, 2 females (H. A. Freeman, AMNH); Tamazunchale, July 1963, 1 male (H. A. Freeman, AMNH), 24 Aug. 1967, 1 male (H. L. King, AMNH); La Mera Ceiba, 31 July 1987, 1 female (J. Kemner, HAF). *Puebla*: Patla, 1800 ft, 16 June 1991, 1 male (J. Kemner, CMNH). *Guerrero*: Acapulco, June 1936, 1 male (H. A. Freeman, AMNH). *Oaxaca*: Candelaria, 1800 ft, 26 June 1988, 1 male (J. Kemner, HAF); Pluma Hidalgo, 4000 ft, 17 Aug. 1988, 1 male (J. Kemner, HAF); Zipolite sea level, 10 Aug. 1990, 1 female (J. Kemner, HAF). *Chiapas*: El Aguacero, 2500 ft, 27 July 1988, 1 male (J. Kemner, HAF), 13 July 1991, 3 males (J. Kemner, HAF).

Discussion.—*Amblyscirtes tolteca tolteca* is found over most of Mexico, the exceptions being the Sonoran desert and Baja California. Specimens that I have observed and collected were most often associated with jungle environments, feeding on flowers or "puddling" at moist spots or near rivers. At times *A. t. tolteca* was abundant near the Río Valles, 6 mi S Ciudad Valles, Hotel Covadonga, S.L.P.

Amblyscirtes tolteca prenda Evans, **revised status** (Fig. 3–4)

Amblyscirtes tolteca prenda Evans, 1955:389.
Amblyscirtes prenda: Freeman, 1973:50.

Type Locality.—UNITED STATES. *Arizona.*

Diagnosis.—This subspecies differs from *A. t. tolteca* in being slightly smaller: males average total expanse 25 mm ($n = 10$), females average 26 mm ($n = 1$), whereas *A. tolteca tolteca* males average 27 ($n = 22$), females 29 mm ($n = 11$). *Amblyscirtes tolteca prenda* is paler in coloration, especially on the under surface, due to a heavy concentration of violet-gray scales along the costa and apex of the primaries and on all of the secondaries, whereas *A. tolteca tolteca* appears darker brownish-black due to the absence of the violet-gray scales. The spots are more sharply defined in *A. tolteca prenda* than in *A. t. tolteca.*

The genitalia and the brands are the same in both.

Description.—See Fig. 3–4.

Specimens Examined.—(10 males, 1 female). UNITED STATES. *Arizona*: Tucson, 22 June 1955, 1 male (Lucian Harris, Jr., HAF). MEXICO. *Sonora*: 10 mi NW Alamos, 13 Aug. 1970, 1970, 1 male (B. Patterson, HAF); Tepoca, Rt. 16, 5 July 1988, 1 male (D. D. Mullins, CMNH). *Baja California Sur*: Ayo. Candelaria, 26 Nov. 1961, 1 male; Ro. Palmarito, 5 Nov. 1961, 1 male, 27 Oct. 1961, 1 male, 21 Oct. 1961, 1 male; Guaycura Hotel grounds, La Paz, 19 Oct. 1961, 1 male, 21 Oct. 1961, 1 male; Puerto Chileno, 22 Nov. 1961, 1 male; Cabo San Lucas, 23 Nov. 1961, 1 female (all CMNH; Cary-Carnegie Expedition 1961, C. M. Acc. 20082).

Discussion.—*Amblyscirtes tolteca prenda* seems to be confined to desert environments as the only specimens that I have seen were collected in Arizona, the Sonoran Desert and Baja California.

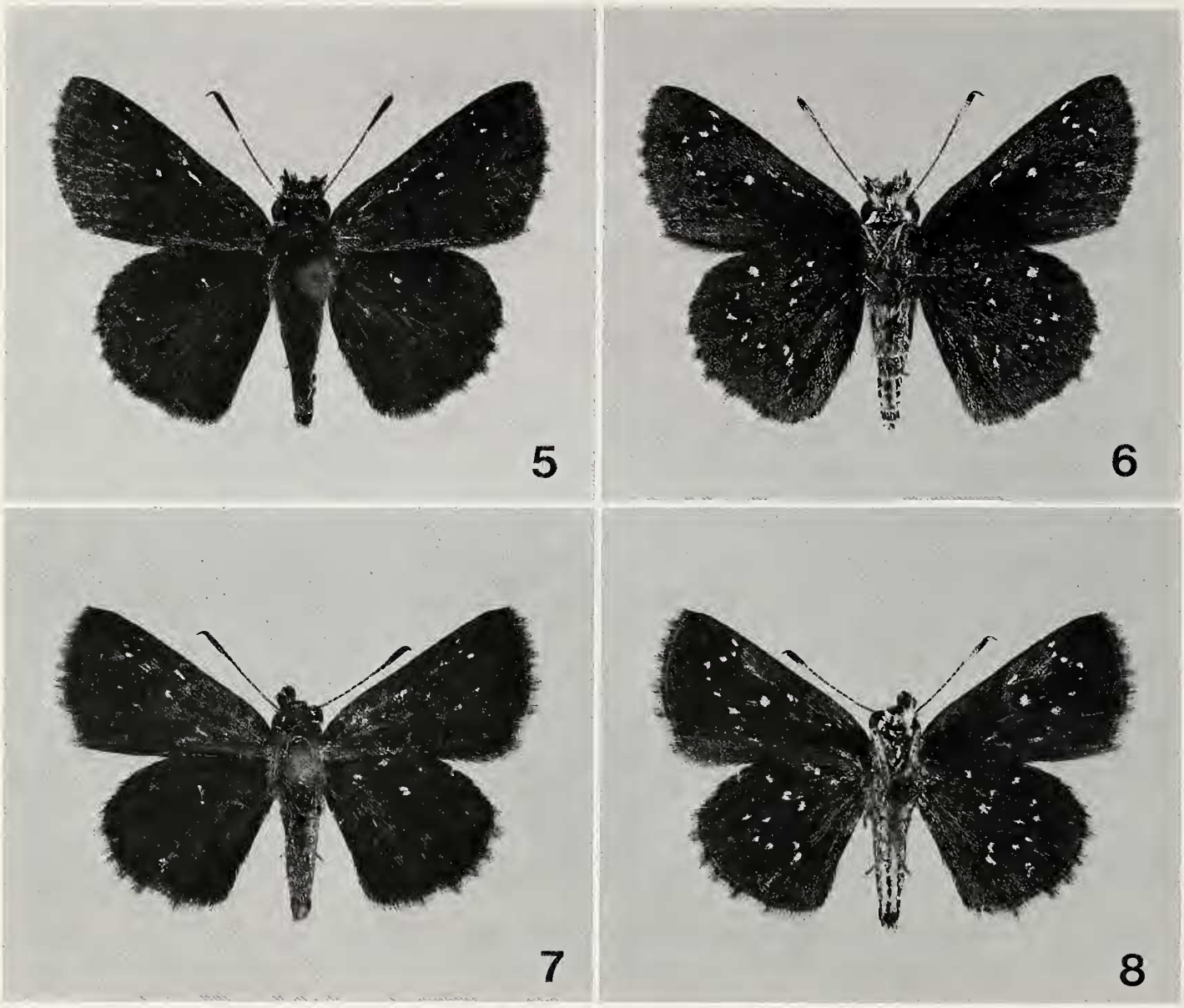

Fig. 5–8.—*Amblyscirtes elissa elissa* Godman: 5, male upper surface, from Mexico, Oaxaca, road to Grutas de San Sebastian, 5500 ft, 13 August 1991 (John Kemner); 6, lower surface of specimen in Fig. 5; 7, female, upper surface, from Mexico, Oaxaca, road to Grutas de San Sebastian, 5500 ft, 13 August 1991 (John Kemner); 8, lower surface of specimen in Fig. 7.

Amblyscirtes elissa elissa Godman
(Fig. 5–8)

Amblyscirtes elissa Godman, (1900): *In* Godman and Salvin, 1887–1901:505, plate 95, fig. 40–41.

Type locality.—MEXICO. *Guerrero.*

Diagnosis.—On the upper surface *A. e. elissa* is very similar to *Amblyscirtes alternata* (Grote and Robinson, 1867) in being dark grayish-brown with the three apical spots being needle points and in having a minute, indistinct, whitish discal spot in space 3. However most males of *A. e. elissa* have no spots. *Amblyscirtes alternata* has the brand reduced to a tiny dash above vein 2 against the cubitus, whereas *A. e. elissa* has a long, thin gray stigma. The lower surface of the wings of *A. e. elissa* slightly resemble *Amblyscirtes eos* (W. H. Edwards, 1871), in that the white spots are sharply defined on the secondaries. On the upper surface in *A. e. elissa* the fringe of both wings is plain brown in the males, with very fresh specimens having a slight indication of being checkered, whereas both *eos* and *alternata* have their fringes distinctly checkered in both sexes. Average total expanse of males 22 mm ($n = 26$), females 23 mm ($n = 2$).

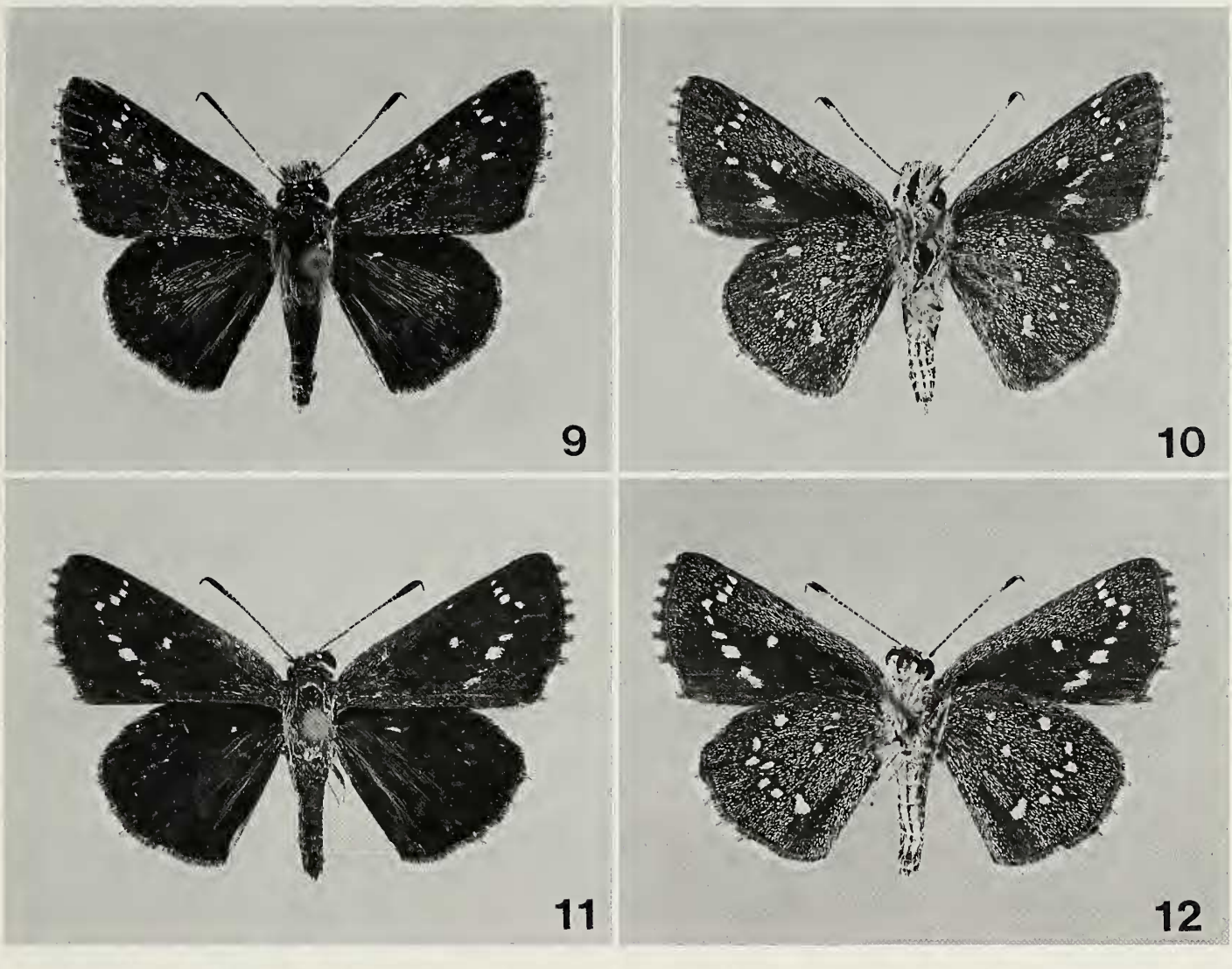

Fig. 9–12.—*Amblyscirtes elissa arizonae* Freeman: 9, male holotype, upper surface, from USA, Arizona, Santa Cruz Co., 0.5 mile W Kino Springs, 20 July 1986 (Jim P. Brock); 10, lower surface of specimen in Fig. 9; 11, female paratype, upper surface, from USA, Arizona, Santa Cruz Co., 0.5 mile W Kino Springs, 23 July 1989 (Jim P. Brock); 12, lower surface of specimen in Fig. 11.

Specimens Examined.—(26 males, 2 females). MEXICO. *Guerrero*: Acahuizotla, Hwy. 95, 3000 ft, 11 Aug. 1989, 1 male (J. Kemner, HAF), July 1960, 1 male (T. Escalante, AMNH); Iguala, Aug. 1951, 1 male (T. Escalante, AMNH). *Oaxaca*: Hwy. 175, 5 mi N city of Oaxaca, 6000 ft, 13 Aug. 1989, 1 male (J. Kemner, HAF), 30 Aug. 1989, 2 males (J. Kemner, HAF); road to Grutas de San Sebastian, 5500 ft, 13 Aug. 1991, 5 males, 1 female (J. Kemner, HAF), 1 male, 1 female (J. Kemner, CMNH). *Chiapas*: El Aguacero, 2500 ft, 3 Sept. 1989, 6 males (J. Kemner, HAF), 8 Sept. 1989, 7 males (J. Kemner, HAF), 13 July 1991, 1 male (J. Kemner, HAF).

Discussion.—From the specimens that I have examined, *A. e. elissa* seems to be confined to the state of Guerrero, Oaxaca, and Chiapas, Mexico. This was a rare species in collections until John Kemner collected a number of specimens in Oaxaca and Chiapas.

Amblyscirtes elissa arizonae Freeman, **new subspecies**
(Fig. 9–12)

Type Locality.—UNITED STATES. *Arizona*: Santa Cruz Co., 0.5 mi W Kino Springs.

Diagnosis.—This subspecies differs from *A. e. elissa* in a number of ways. Males have well-developed white spots on the upper and under surfaces of the primaries, three subapical in spaces 6, 7, 8, one in the cell, one in space 3, and sometimes

faint ones in spaces 2, 4, and 5, whereas *A. elissa elissa* does not have any of these spots well-defined, with only faint subapical and a discal spot in space 3 sometimes present. The fringe on the primaries of *A. elissa arizonae* is usually distinctly checkered, whereas in *A. elissa elissa* it is usually plain brown. On the under surfaces of the primaries in *A. elissa elissa,* the only white spots present are faint ones in the cell and in spaces 3, 4, 5, 6, 7, and 8, all of which may be absent. In *A. elissa arizonae* the white spots are usually well-developed and extend from space 1 to space 8, with a distinct spot in the cell. The under surfaces of the secondaries have the white spots better defined in *A. elissa arizonae,* especially the one in the cell. The females of *A. elissa arizonae* have all spots better defined than in males with some specimens having spots in spaces 1a and 1b on the upper and lower surfaces of the primaries. *Amblyscirtes elissa arizonae* is slightly larger than *A. elissa elissa,* as the average total expanse of the males is 24 mm ($n = 34$), females 25 mm ($n = 22$). The genitalia and the stigma are the same in both subspecies.

Specimens Examined.—(34 males, 22 females). UNITED STATES. *Arizona*: Santa Cruz Co., 0.5 mi W Kino Springs, 20 July 1986, 3 males, 4 females (J. P. Brock, HAF), 1 male (J. P. Brock, CMNH), 23 July 1989, 1 female (J. P. Brock, CMNH); St. Hwy. 82, 0.5 mi SW Kino Springs, 21 July 1991, 1 male, 1 female (J. P. Brock, JPB); 8 males, 4 females (J. P. Brock, HAF), 23 July 1989, 1 male, 3 females (J. P. Brock, JPB); Sycamore Canyon, near Ruby, 25 July 1990, 2 males (J. P. Brock, JPB), 2 males (J. P. Brock, HAF), Peña Blanca Lake, 19 July 1990, 2 males, 1 female (J. P. Brock, HAF), 1 male, 1 female, reared on *Bouteloua curtipendula* (Poaceae) (J. P. Brock, JPB), 2 Aug. 1989, 1 male, 6 females (D. D. Mullins, HAF). MEXICO. *Sonora*: creek at 5000 ft, Trinidad-Yecora rd., 6 mi W Yecora, 31 July 1984, 2 males (J. P. Brock, JPB), 3 males (J. P. Brock, HAF); Trinidad-Yecora rd., 5 mi NW of Yecora, 21 July 1985, 2 males, 1 female (J. P. Brock, JPB); Nacori Chico-Tres Ríos rd., Jct. of El Rito, 15–16 July 1988, 1 male (J. P. Brock, JPB), 2 males (J. P. Brock, HAF); 13 mi E of El Novillo, 12 Aug. 1985, 1 male (J. P. Brock, JPB). *Jalisco*: Chapala, 19 June 1978, 1 male (P. M. Jump, HAF).

Type Material.—Holotype: male, *Amblyscirtes elissa arizonae* Freeman; Arizona: Santa Cruz Co., 0.5 mi W Kino Springs, 20 July 1986, Jim P. Brock; length of fore wing 12.2 mm, length of hind wing 9.1 mm; deposited in CMNH. All of the specimens listed under Specimens Examined are paratypes and will be placed in the following museums and private collections: CMNH, USNM, AMNH, Allyn Museum of Entomology, Sarasota, Florida (AME), JPB, D. D. Mullins (DDM), and HAF.

Discussion.—This subspecies occurs from southern Arizona to Jalisco, Mexico. It differs from *A. elissa elissa* by having the maculation much better developed and by being slightly larger in total expanse.

Amblyscirtes fimbriata fimbriata (Plötz)
(Fig. 13–16)

Hesperia fimbriata Plötz, 1882:322.
Pamphila bellus W. H. Edwards, 1884:57.

Type Locality.—MEXICO.

Diagnosis.—The most similar species is *Amblyscirtes phylace* (W. H. Edwards, 1878) based on maculation and the presence of a stigma in the males. *Amblyscirtes f. fimbriata* is uniform dark brownish-black with no spots, the fringe in both sexes is orange on both wings, the head and palpi are orange in both sexes, and males have a long, narrow, broken gray stigma extending from the origin of vein 3 to vein 1. *Amblyscirtes phylace* is uniform dark grayish-black with no spots. In males the fringe of both wings is white and in females sordid white to light gray. In

Fig. 13–16.—*Amblyscirtes fimbriata fimbriata* (Plötz): 13, male, upper surface, from Mexico, Oaxaca, Sierra Juarez, La Cumbre-El Punto, 9500 ft, 13 April 1989 (John Kemner); 14, lower surface of specimen in Fig. 13; 15, female, upper surface, from USA, Arizona, Cochise Co., Pinery Canyon, 6500 ft, 11 July 1960 (H. A. Freeman); 16, lower surface of specimen in Fig. 15.

males the head and palpi are light orange and in females yellowish-white. In males the stigma is short and broad, and extends from the origin of vein 3 to just below vein 2. The average total expanse of males of *A. fimbriata* is 27 mm ($n = 33$), females 29 mm ($n = 22$). The male genitalia are illustrated in Lindsey et al. (1931) as *Amblyscirtes bellus.*

Specimens Examined.—(33 males, 23 females). UNITED STATES. *New Mexico*: Sandoval Co., Jemez Springs, 14 Sept. 1914, 4 males, 5 females (J. Woodgate, AMNH). *Arizona*: Cochise Co., Chiricahua Mts., 21 June 1932, 1 male, 2 females (L. Hulbirt, HAF), 26 June 1936, 1 male (L. Hulbirt, HAF), 28 June 1942, 2 males, 4 females (L. Hulbirt, HAF); Ramsey Canyon, 28 June 1936, 2 males, 2 females (L. Hulbirt, HAF); Rustlers Park, 20 June 1963, 1 male (L. Freeman, HAF), 2 males (H. A. Freeman, HAF); Pinery Canyon, 6500 ft, 11 July 1960, 4 males, 5 females (H. A. Freeman, HAF), 1 female (H. A. Freeman, CMNH); Onion Saddle, 12 July 1960, 1 male, 2 females (H. A. Freeman, HAF); Portal, 10 July 1960, 1 female (H. A. Freeman, HAF). MEXICO. *Nuevo Leon*: Monterrey, Chipinque Mesa, 13 Aug. 1967, 1 male (AMNH); La Palma-Rayones, 4000 ft, 7 July 1990, 1 male (J. Kemner, HAF). *Coahuila*: 8 mi E Los Lirios, San Rafael 8200 ft, 7 June 1989, 2 males (J. Kemner, HAF). *Oaxaca*: Sierra Juarez, La Cumbre-El Punto, 9500 ft, 13 Apr. 1989, 1 male (J. Kemner, HAF), 1 male (J. Kemner, CMNH), 22 Apr. 1989, 3 males (J. Kemner, HAF), 24 A. 1989, 1 male (J. Kemner, HAF), 9 Apr. 1990, 1 male (J. Kemner, HAF); Sierra Juarez, 3 mi E La Trinidad, 20 May 1990, 1 male (J. Kemner, HAF); river 5 mi E Ixtlan de Juarez, 7500 ft, 20 May 1990, 1 male (J. Kemner, HAF); 1–5 mi E Ixtlan de Juarez, 7500 ft, 4 July 1991, 1 male (J. Kemner, HAF); 18 mi E Mitla, San Lorenzo, 16 June 1989, 2 males (J. Kemner, HAF).

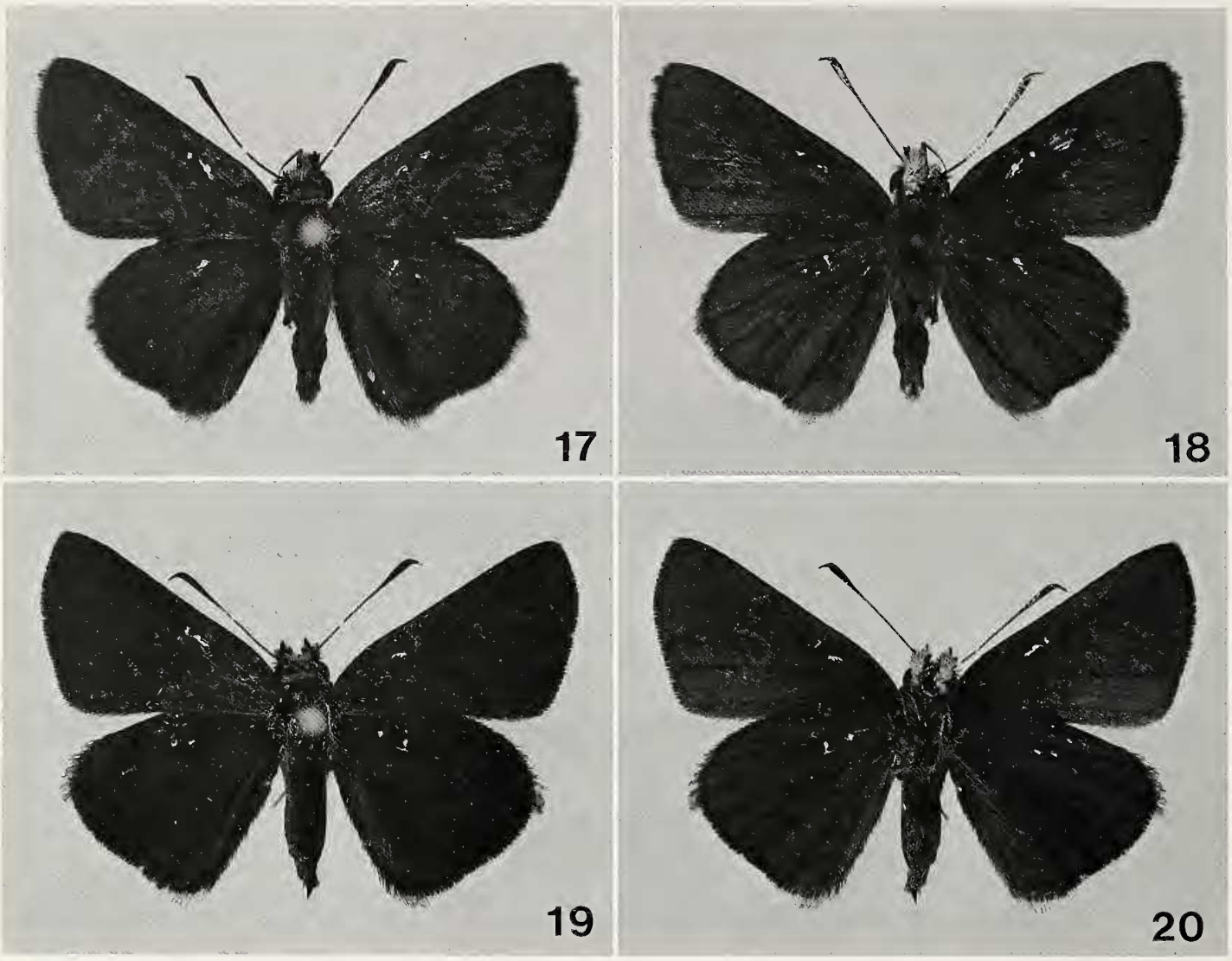

Fig. 17–20.—*Amblyscirtes fimbriata pallida* Freeman: 17, male holotype, upper surface from Mexico, Mexico, 64 km W Toluca, 9300 ft, 10 June 1989 (John Kemner); 18, lower surface of specimen in Fig. 17; 19, female paratype, upper surface, from Mexico, Mexico, 64 km W Toluca, 9300 ft, 10 June 1989 (John Kemner); 20, lower surface of specimen in Fig. 19.

Discussion.—*Amblyscirtes f. fimbriata* occurs commonly in Arizona and New Mexico and extends to Oaxaca, Mexico, at fairly high elevations. Specimens of this subspecies collected at the Mexican localities mentioned above are the same as ones found in Arizona and New Mexico in size and general appearance.

Amblyscirtes fimbriata pallida Freeman, **new subspecies**
(Fig. 17–20)

Type Locality.—MEXICO. *Mexico*: 64 km W Toluca, 9300 ft.

Diagnosis.—This subspecies differs from *A. fimbriata fimbriata* in having the fringes of both wings in both sexes snow white to very pale yellow, never orange. Some specimens look very similar to *Amblyscirtes phylace,* however the orange head and palpi of females and the long, narrow gray stigma extending from the origin of vein 3 to vein 1 in the males in *A. fimbriata pallida* easily separate the two species. The fringe coloration and slightly smaller total expanse are the only differences between *A. fimbriata pallida* and *A. fimbriata fimbriata.* Total expanse of males 24 mm (n = 17), females 26 mm (n = 35). The genitalia are the same as *A. f. fimbriata.*

Discussion.—The entire type series was collected on 10 June 1989 by John

Kemner. Most of the males were "puddling" or found near moist spots, and the females were "nectaring" on small white flowers. So far this subspecies has not been collected at any other location.

Type Material.—Holotype: male *Amblyscirtes fimbriata pallida* Freeman; MEXICO. Mexico, 64 km W Toluca, 9300 ft, 100 June 1989, John Kemner; length of fore wing 13.4 mm, length of hind wing, 10.4 mm; deposited in CMNH. There are 16 male and 34 female paratypes, same data as holotype, in my collection (HAF) and one female paratype in the CMNH at the present time. Paratypes will be placed in the following museums: CMNH, AMNH, USNM, and AME.

CHECKLIST OF THE GENUS *AMBLYSCIRTES*

This checklist includes the presently known species and subspecies of *Amblyscirtes* and synonyms.

vialis (W. H. Edwards, 1862)
  asella (Herrich-Schäffer, 1869)
linda Freeman, 1943
fluonia Godman, 1900
aenus W. H. Edwards, 1878
  erna Freeman, 1943
cassus W. H. Edwards, 1883
texanae Bell, 1927
hegon (Scudder, 1863)
  samoset (Scudder, 1863)
  nemoris (W. H. Edwards, 1864)
  argina (Plötz, 1884)
carolina Skinner, 1892
reversa Jones, 1926
aesculapius (Fabricius, 1793)
  textor (Geyer, 1831)
  oneko (Scudder, 1863)
  wakulla (W. H. Edwards, 1869)
nereus (W. H. Edwards, 1876)
nysa (W. H. Edwards, 1877)
  similis (Strecker, 1878)
eos (W. H. Edwards, 1871)
  comus (W. H. Edwards, 1876)
  nilus (W. H. Edwards, 1878)
  quinquemacula (Skinner, 1911)
elissa elissa Godman, 1900
elissa arizonae Freeman, 1993
alternata (Grote and Robinson, 1867)
  meridionalis Dyar, 1905
tolteca tolteca Scudder, 1872
tolteca prenda Evans, 1955
celia Skinner, 1895
belli Freeman, 1941
oslari Skinner, 1899
brocki Freeman, 1991
exoteria (Herrich-Schäffer, 1869)

nanno W. H. Edwards, 1882
marcus (Strand, 1907)
folia Godman, 1900
tutolia Dyar, 1913
raphaeli Freeman, 1973
immaculatus Freeman, 1970
patriciae (Bell, 1959)
phylace (W. H. Edwards, 1878)
anubis (Godman, 1900)
fimbriata fimbriata (Plötz, 1882)
bellus (W. H. Edwards, 1884)
fimbriata pallida Freeman, 1993

Three species that were previously recorded by Evans (1955) and Freeman (1973) as being members of the *Amblyscirtes* (*Amblyscirtes simius* W. H. Edwards, 1881, *Amblyscirtes insulaepinorum* Holland, 1916, and *Stomyles florus* Godman, 1900) are not included in the checklist because they are not members of the genus *Amblyscirtes*. None of these species have the basic characteristics of the genitalia of the 28 species of *Amblyscirtes* listed, which have a long aedeagus with the terminal end divided, a long narrow saccus, and the tegumen with a delicate, middorsal, caudally arching prong over a somewhat oval opening. The correct generic placement of these three species, based on their genitalia and some other features, awaits further study.

ACKNOWLEDGMENTS

I thank Dr. J. E. Rawlins (CMNH) for making the photographs used in this article, for loaning specimens for study, and for offering helpful suggestions; Dr. J. M. Burns (USNM) for helpful suggestions and the loan of specimens; J. Kemner, Dripping Springs, Texas, for collecting many of the specimens used in this study; J. P. Brock (JPB) and D. D. Mullins, Tucson, Arizona, for furnishing specimens from Arizona and the Sonoran Desert.

LITERATURE CITED

BURNS, J. M. 1990. *Amblyscirtes*: Problems with species, species groups, the limits of the genus, and genus groups beyond—a look at what is wrong with the skipper classifications of Evans (Hesperiidae). Journal of the Lepidopterists' Society, 44(1):11–27.

———. 1992. Genitalic characterization, enlargement and reassociation of the Neotropical hesperiine genus *Halotus* (Hesperiidae). Journal of the Lepidopterists' Society, 46(3):182–194.

EDWARDS, W. H. 1884. Descriptions of new species of butterflies, mostly from Arizona. Papilio, 4(3):53–58.

EVANS, W. H. 1955. A Catalogue of the American Hesperiidae Indicating the Classification and Nomenclature Adopted in the British Museum (Natural History). Part IV. Hesperiinae and Megathyminae. British Museum, London, 499 pp.

FREEMAN, H. A. 1973. A review of the *Amblyscirtes* with the description of a new species from Mexico (Hesperiidae). Journal of the Lepidopterists' Society, 27(1):40–57.

GODMAN, F. D., AND O. SALVIN. 1887–1901. Biologia Centrali-Americana. Insecta. Lepidoptera-Rhopalocera. Volume II [text] and III [plates]. Taylor and Francis, London, 782 pp., 112 plates.

LINDSEY, A. W., E. L. BELL, AND R. C. WILLIAMS, JR. 1931. The Hesperioidea of North America. Denison University Bulletin, 31:1–142.

PLÖTZ, C. 1882. Die Hesperiinen-Gattung *Hesperia* Aut. und ihre Arten. Stettiner entomologische Zeitung, 43:314–344, 436–456.

SCUDDER, S. H. 1872. A systematic revision of some of the North American butterflies; with brief notes on those known to occur in Essex Co., Mass. Fourth Annual Report of the Peabody Academy of Sciences, (1871):24–83.